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     (FILE 'HOME' ENTERED AT 17:34:15 ON 23 OCT 2007)
     FILE 'CA' ENTERED AT 17:34:22 ON 23 OCT 2007
L1  25358 S GEL(3A)( PERMEAT? CHROMATOG? OR SIZE EXCLU?) OR GPC OR HPGPC
L2  20409 S (REVERSE PHASE OR RP)(3A)(HPLC OR HIGH(4A)CHROMATOG?) OR RPLC
L3    356 S L1 AND (INTERFAC? OR SOLVENT(4A)(CHANG? OR EXCHANG? OR REPLAC?))
L4    219 S L2 AND (INTERFAC? OR SOLVENT(4A)(CHANG? OR EXCHANG? OR REPLAC?))
L5 287108 S HPLC OR LIQUID CHROMATOG?
L6   4700 S L5 AND (INTERFAC? OR SOLVENT(4A)(CHANG? OR EXCHANG? OR REPLAC?))
L7     29 S L3 AND L6
L8      3 S L3 AND L4
L9     31 S L1(7A)(COUPL? OR INTERFAC?)(7A)L2,L5
L10    46 S L1 AND SOLVENT(4A)(CHANG? OR EXCHANG? OR REPLAC?)
L11    27 S L2 AND SOLVENT(4A)(CHANG? OR EXCHANG? OR REPLAC?)
L12   510 S L5 AND SOLVENT(4A)(CHANG? OR EXCHANG? OR REPLAC?)
L13    74 S L5 AND SOLVENT(4A)(CHANG? OR EXCHANG? OR REPLAC?)/TI,IT,ST
L14    37 S L12 AND AUTOMAT?
L15   228 S L7-11,L13-14
L16   165 S L15 NOT((ION OR CATION OR ANION OR ISOTOP?)(1A)EXCHANG? OR NMR)
L17     5 S L15 NOT L16 AND (COLUMN(1A)SWITCH? OR POLYCYCLIC)
L18   145 S L16 NOT(IR OR FTIR OR LC GC OR PARTICLE BEAM OR CALCULATOR OR ESI
          MS OR ESR OR MASS RATE OR CASSETTE)
L19     1 S L16 NOT L18 AND HOT CHILI
L20   110 S L18 NOT((PULSE OR PULSED)(W)FLAME OR FAST ATOM OR SCHIFF OR GAS
          CHROMATOGR? OR ONLINE LASER OR KINETICS OR TRIBLOCK OR EVAPORATIVE
          OR CO PPTN OR THERMOSPRAY OR CARBON 14 OR BRAIN OR INTERFAC?
          MATRIX OR PH(1A)CHANGE OR RUBBER)
L21   105 S L1(W)L2,L5
L22    12 S L1/TI(W)L2,L5
L23    49 S L21 AND(PRIOR OR CLEAN OR CLEANUP OR POLYCYCLIC OR PAH OR (GPC OR
          HPGPC)(W) (HPLC OR RPLC OR RPHPLC))
L24    48 S L1(7A)(COMBINED OR COMBINATION)(7A)L2,L5
L25     4 S L1(7A)(COMBINED OR COMBINATION)/TI(7A)L2,L5
L26     5 S L24 AND(PRIOR OR CLEAN OR CLEANUP OR POLYCYCLIC OR PAH OR (GPC OR
          HPGPC)(W) (HPLC OR RPLC OR RPHPLC))
L27   169 S L17,L19-20,L22-23,L25-26

=> d l27 bib,ab,kwic 1-169

L27  ANSWER 21 OF 169  CA  COPYRIGHT 2007 ACS on STN
AN   141:423567  CA
TI   Determination of aromatic hydrocarbons in edible oil products
IN   Dijke, Abraham
PA   Cargill, Incorporated, USA
SO   PCT Int. Appl., 41 pp.
PI   WO 2004102181        A2    20041125    WO 2004-US15351        20040513
     US 2005106741        A1    20050519    US 2003-688028         20031017
PRAI US 2003-509041P      P     20030513
     US 2003-688028       A     20031017
AB   Methods for rapid and precise anal. of low levels of arom. hydrocarbons,
     particularly polycyclic arom. hydrocarbons (PAH), such as
     benzo[a]pyrene, in edible oils, edible fats and related products, such
     as
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distillates of these materials, are described. The methods, particularly
automated in-line **gel permeation chromatog./HPLC**, require minimal sample prepn. and little or no operator input. The detn. of sub-ppb levels of **PAH** and the detn. of multiple **PAH** simultaneously are possible.

L27 ANSWER 31 OF 169 CA COPYRIGHT 2007 ACS on STN
AN 136:318524 CA
TI Enhancement of selectivity in reversed-phase liquid chromatography
AU Lavine, Barry K.; Ritter, Jason P.; Peterson, Sean
CS Department of Chemistry, Clarkson University, Potsdam, NY, 13699-5810, USA
SO Journal of Chromatography, A (2002), 946(1-2), 83-90
AB In an effort to gain insight into the relation between stationary phase solvation and selectivity, the use of short- and medium-chained-length alcs. (methanol, n-propanol, n-butanol, and n-pentanol) as mobile phase modifiers in reversed-phase liq. chromatog. (**RPLC**) was studied to det. their impact on chromatog. selectivity. A wide range of mobile phase compns. was evaluated because of the large effect exerted by solvent strength on selectivity. Employing a set of six vanillin compds. as retention probes, evidence is presented to support the view that an increase in the hydrophobicity of the org. modifier used in **RPLC** can increase the selectivity of the C18 alkyl bonded phase while simultaneously decreasing the retention time of the eluting solutes. Thus, the authors are presented with an interesting paradox: higher selectivity and shorter retention times, which can be attributed to **changes** in either **solvent** selectivity and/or stationary phase solvation by the org. modifier.

L27 ANSWER 56 OF 169 CA COPYRIGHT 2007 ACS on STN
AN 131:57955 CA
TI Determination of cholesterol in egg yolk by high performance **liquid chromatography** using an **automated** precolumn-switching procedure
AU Emara, Samy; Hussien, Samiha A.; Mohamed, Fardos A.
CS Department of Analytical Chemistry Faculty of Pharmacy, Suez Canal University, Ismailia, Egypt
SO Journal of Liquid Chromatography & Related Technologies (1999), 22(8), 1235-1246
AB A direct injection **HPLC** method is developed for the detn. of cholesterol in egg-yolk. The described method involved an online sample clean-up procedure using column-switching technique and protein-coated RP-18 precolumn. The egg-yolk was dild. with tris buffer, pH 8.5 to produce homogeneous sample and render it suitable for injection. On the precolumn, cholesterol was presepd. from endogenous components of the egg-yolk with tris buffer, pH 8.5 for 4 min. To complete the precolumn washing cycle, the **solvent** selector is **automatically changed** from tris buffer to 0.05 M phosphate buffer, pH 4.8 for 2 min, followed by 15% methanol in 0.05 M phosphate buffer, pH 4.8 for 1 min further. After column switching, the elute fraction contg. cholesterol was further sepd. by reversed-phase chromatog. using Spherisorb column with a mobile phase consisting of acetonitrile, isopropanol, and phosphate buffer, pH 4 (40:50:10, vol./vol.). The av. cholesterol recoveries ranged from 97.70 to 100.50% and the relative std. deviations ranged from 2.70 to

3.84%. The method allows accurate and fast daily routine monitoring of cholesterol in large nos. of chicken eggs and is proven to be highly applicable in studying nutritional effects on chicken egg cholesterol.

L27 ANSWER 65 OF 169 CA COPYRIGHT 2007 ACS on STN
AN 129:189857 CA
TI Separation of oligomers from poly(vinyl chloride) by coupled column chromatography
AU Celik, Alexander H.; Dawkins, John V.; Price, David; Forrest, Martin J.
CS Department Chemistry, Loughborough University, Loughborough, LE11 3TU, UK
SO International Journal of Polymer Analysis and Characterization (1998), 4 (3), 189-203
AB A multistage scheme was developed for the sepn. of vinyl chloride (VC) oligomers. A low-mol.-wt. fraction was isolated from poly(vinyl chloride) by Soxhlet extn. with di-Et ether followed by fractional pptn. with n-pentane. The presence of VC oligomers up to decamer was demonstrated by high-performance gel permeation chromatog. (HPGPC). Removal of polar impurities was accomplished by preparative adsorption liq. chromatog. of the low-mol.-wt. fraction. Recycle HPGPC with repeated injections permitted the accumulation of fractions of VC pentamer oligomers which were resolved into their isomers by high-performance liq. chromatog. (HPLC) off-line. These results were duplicated utilizing a **coupled** column system comprising of recycle **HPGPC** connected online to **HPLC**. This coupled technique was then applied to the hexamer and heptamer oligomers which were resolved into their constituent isomers.

L27 ANSWER 94 OF 169 CA COPYRIGHT 2007 ACS on STN
AN 122:285782 CA
TI Assay of neopterin in serum by means of two-dimensional high-performance **liquid chromatography** with **automated column switching** using three retention mechanisms
AU Huber, Josef F. K.; Lamprecht, Guenther
CS Institute for Analytical Chemistry, University of Vienna, Waehringer Strasse 38, Vienna, A-1090, Austria
SO Journal of Chromatography, B: Biomedical Applications (1995), 666(2), 223-32
AB An **automated** two-dimensional **HPLC** method for the detn. of neopterin in serum is described. Neopterin is sepd. from proteins on a short octadecylsilica column by size exclusion and from the majority of the other serum components by adsorption. The fraction contg. neopterin is transferred by **column switching** to a **solvent**-generated cation-**exchange** column using dodecylsulfonic acid as surface activator. Parameters influencing the sepn. performance and sensitivity of the fluorescence detection are discussed. The efficiency of the cleaning of the first column was optimized. The method was validated. It achieves a precision of 1% (R.S.D.) and a detection limit of about 0.3 nmol/l. The accuracy is nearly 100%. The method allows a high sample throughput, requiring 15 min per sample.

L27 ANSWER 104 OF 169 CA COPYRIGHT 2007 ACS on STN
AN 118:208729 CA
TI Automated high-performance liquid chromatographic determination of

hydroxylysylpyridinoline and lysylpyridinoline in urine using a column-switching method

AU Yoshimura, Yoshinobu; Ohnishi, Koji; Hamamura, Misako; Oda, Tsuneo; Sohda, Takashi

CS Pharm. Dev. Div., Takeda Chem. Ind., Ltd., Osaka, 532, Japan

SO Journal of Chromatography, Biomedical Applications (1993), 613(1), 43-9

AB An online urine **clean**-up system was developed for the simultaneous detn. of free and total pyridinoline, hydroxylysylpyridinoline (HP), and lysylpyridinoline (LP) by HPLC using a column-switching technique. The method is based on a **combination** of **gel permeation chromatog.** (**GPC**) and ion-pair reversed-phase **HPLC**. In the GPC column, pyridinoline is presepd. from endogenous urinary substances with 0.03M heptafluorobutyric acid (HFBA) as the mobile phase. After column switching, the eluate fraction contg. pyridinoline is further sepd. by ion-pair chromatog. using an octadecylsilica (ODS) column with 0.03M HFBA-MeCN (81:19) as the mobile phase. The detection limits were 36 and 44 pmol/mL for free and total HP, resp., and 44 pmol/mL for both free and total LP at a signal-to-noise ratio of 3. The coeffs. of variation for free and total pyridinoline were 1.5 and 3.5%, resp. The anal. of 1 sample including the **clean**-up is completed within 25 min. This system is precise and is useful for the detn. of pyridinoline in large amts. of urine. The usefulness of pyridinoline as a biomedical marker for bone resorption was also examd.

L27 ANSWER 110 OF 169 CA COPYRIGHT 2007 ACS on STN

AN 116:132450 CA

TI Quantitative analysis of dialkylmercaptothiadiazole in lubricating oils by **HPLC** directly **coupled** with **GPC** (**gel permeation chromatograph**)

AU Shimizu, Masaru; Imai, Isamu; Shigekuni, Hiroyuki; Matsuzaki, Akira

CS Cent. Tech. Res. Lab., Nippon Oil Co., Ltd., Yokohama, 231, Japan

SO Sekiyu Gakkaishi (1992), 35(1), 65-70

LA Japanese

AB Dialkylmercaptothiadiazole (I) was detd. in lubricating oils using a **HPLC** (high-pressure **liq. chromatog.**) **coupled** directly with **gel permeation chromatograph** (**GPC-HPLC**). Both chromatographs were connected with a 3-way valve and a 6-way valve. The I-rich fraction of a lubricating oil sepd. by GPC, was trapped immediately in the loop with the 6-way valve by switching the 3-way valve; the fraction was then introduced into the HPLC column using the 6-way valve. The most appropriate time for switching of the 3-way valve was 14 min. The limit of detection 0.01%. Several additives in lubricating oils were detd. by this method; better resoln. was obsd. than that obtained by HPLC alone.

L27 ANSWER 113 OF 169 CA COPYRIGHT 2007 ACS on STN

AN 115:251593 CA

TI Comparative depolymerization of sodium hyaluronate by ultrasonic and enzymic treatments

AU Chabrecek, Peter; Soltes, Ladislav; Orvisky, Eduard

CS Inst. Biotechnol., Slovak Tech. Univ., Bratislava, CS-812 43, Czech.

SO Journal of Applied Polymer Science: Applied Polymer Symposium (1991), 48(Polym. Anal. Charact. 3), 233-41

AB A sample of Na hyaluronate was submitted to progressive depolymn. to investigate the role of degrdn. agent on mol. wt. characteristics of the

fractions obtained. Two degrdn. methods were used: enzymic and ultrasonic. Sonication is the best way to prep. Na hyaluronate with a controlled mol. wt., as the chem. structure is not changed, the polydispersity is low, and the reciprocal value of the mol. wt. square of the hyaluronate is linearly proportional to the time of ultrasonication. **Gel-permeation chromatog. coupled** with **HPLC** instrumentation was used to det. the mol. characteristics of highly purified Na hyaluronate in solns. during ultrasonic and enzymic degrdn.

L27 ANSWER 134 OF 169 CA COPYRIGHT 2007 ACS on STN
AN 105:93901 CA
TI Gel permeation for the online removal of proteins from plasma samples prior to HPLC
AU Kraak, J. C.; Kuiper, K.; Ruyter, E.
CS Lab. Anal. Chem., Univ. Amsterdam, Amsterdam, 1018 WV, Neth.
SO International Journal of Environmental Analytical Chemistry (1986), 25 (1-3), 209-20
AB When gel permeation chromatog. (GPC) was investigated for the online removal of proteins from blood plasma samples prior to HPLC anal. of plasma, GPC was found to be a mild and effective way to remove the proteins. **GPC** can very well be **coupled** online to **HPLC**, providing the solutes are suitable for preconcn. on the anal. column itself or on a small precolumn after GPC. Under these conditions, excellent reproducibility and accuracy can be obtained. The system was tested with plasma samples spiked with various drugs.

L27 ANSWER 135 OF 169 CA COPYRIGHT 2007 ACS on STN
AN 105:17281 CA
TI Improving the flexibility of an analytical robotic system
AU Van Antwerp, John; Venteicher, Robert F.
CS Quality Control Dep., Hoffmann-La Roche, Nutley, NJ, 07110, USA
SO LC-GC (1986), 4(5), 458-60
AB The flexibility of an anal. robotic system, particularly for multiple **HPLC** applications, was enhanced by **interfacing** a controller with a column-switching device, a programmable **HPLC** pump, a UV-visible **HPLC** detector, and a solvent-selector valve. The controller (Zymate) can select among 5 **HPLC** columns and a purge valve position; using solenoids, the controller also can change mobile phases for orderly shutdowns and start-ups. The controller selects between UV-visible or fluorescence detection, chooses the monitoring wavelength, dets. which detector signal is monitored for data acqusition, turns the **HPLC** pump on and off, and selects among several flow rates at controlled rates of change to protect columns such as those used for **gel permeation chromatog.** The programmable, downstream control constitutes a significant advance in the implementation of flexible, routine, multidimensional-**HPLC** methods.

L27 ANSWER 152 OF 169 CA COPYRIGHT 2007 ACS on STN
AN 93:47356 CA
TI **Coupled GPC/HPLC**: copolymer composition and axial dispersion characterization
AU Balke, S. T.; Patel, R. D.
CS Xerox Res. Cent. Canada, Mississauga, ON, L5L 1J9, Can.
SO Journal of Polymer Science, Polymer Letters Edition (1980), 18(6), 453-6

AB Two gel-permeation chromatog. (GPC)/high-performance liq. chromatog. devices are used with different mobile phases and coupled so that the first GPC instrument feeds the injection part of the second. The solvent in the first GPC app. is chosen to accomplish only a hydrodynamic vol. sepn. and the second is chosen so as to be a thermodynamically poorer solvent for one of the comonomers. Bu methacrylate-styrene copolymer [25213-39-2] was examd. using 100% THF in the first GPC and 60% n-heptane in THF in the second. Sources of error were discussed and it was noted that direct measures of axial dispersion effects could be obtained using calibration curves from std. polystyrene.

L27 ANSWER 160 OF 169 CA COPYRIGHT 2007 ACS on STN
AN 79:64609 CA
TI Applications of **combined gel permeation chromatography** and high speed **liquid chromatography** for the separation of complex flavor mixtures
AU Schmit, John A.; Williams, Reed C.; Henry, Richard A.
CS Instrum. Prod. Div., E. I. du Pont de Nemours and Co., Inc., Wilmington, DE, USA
SO Journal of Agricultural and Food Chemistry (1973), 21(4), 551-6
AB Combined liq. chromatog. techniques were used for the characterization of citrus essential oil and a selected alc. beverage, rum. These mixts. were sepd. by both gel permeation and partition models of liq. chromatog. The techniques described establish the feasibility of this approach for controlling processing variables in the prodn. of these products and detg. the contribution of extn.-reaction mechanisms to the aging of alc. beverages and describe a method for the purifn. of individual components for further anal.

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STN INTERNATIONAL LOGOFF AT 18:53:02 ON 23 OCT 2007

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(FILE 'HOME' ENTERED AT 11:55:38 ON 24 OCT 2007)
FILE 'CA' ENTERED AT 11:55:46 ON 24 OCT 2007
L1 25358 S GEL(3A)(PERMEAT? CHROMATOG? OR SIZE EXCLU?) OR GPC OR HPGPC
L2 20409 S (REVERSE PHASE OR RP)(3A)(HPLC OR HIGH(4A)CHROMATOG?) OR RPLC
L3 308392 S HPLC OR LIQUID CHROMATOG? OR LC
L4 2247 S L1 AND L2-3
L5 8 S L4 AND COLUMN(2A)(SWITCH? OR CHANG?)
L6 38354 S (PAH OR POLYCYCLIC AROMATIC HYDROCARBON OR POLYNUCLEAR AROMATIC)
L7 41 S L6 AND COLUMN(2A)(SWITCH? OR CHANG?)
L8 57 S L6 AND (2D OR(2 OR TWO)(W)DIMENSION?)(3A)CHROMATOG?
L9 89 S L1 AND L6
L10 3711 S L1-3 AND L6
L11 45 S L10 AND(THF OR TETRAHYDROFURAN)
L12 235 S L5,L7-9,L11
L13 180 S L12 AND PY<2003
L14 145 S L13 NOT(TLC OR THIN LAYER?)
L15 3 S L13 NOT L14 AND(FOOD OR CMPLEX OR TETRAHYDROFURAN)/TI
L16 123 S L14 NOT(COAL OR DIMENSION? GAS OR MEKC OR ABSOLUTE)
L17 18 S L6 AND((MULTI OR MULTIPLE OR DUAL)(1A)COLUMN OR MULTICOLUMN)
L18 8 S L17 AND L1-3
L19 128 S L16,L18

=> d bib,ab,kwic l19 1-128

L19 ANSWER 35 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 125:66833 CA
TI Automatic sample preparation in water for **PAHs**
AU Jansen, Karl Heinz
CS SYKAM G.m.b.H., Gilching, D-82205, Germany
SO GIT Spezial Chromatographie (**1996**), 16(1), 16-19
LA German
AB A new enrichment method for **polycyclic arom. hydrocarbons** (**PAH**) in water on a polystyrene phase followed by elution into a **HPLC** system is presented. Addn. of a 3% **THF** to the water samples prevents **PAH** adsorption onto the solvent delivery system. Recovery is 95-105% over the total concn. range.

L19 ANSWER 46 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 122:289741 CA
TI Solid-phase extraction of **polycyclic aromatic hydrocarbons** from soil samples
AU Kootstra, P. R.; Straub, M. H. C.; Stil, G. H.; van der Velde, E. G.; Hesselink, W.; Land, C. C. J.
CS Laboratory of Organic-Analytical Chemistry, National Institute of Public Health and Environmental Protection (RIVM), P.O. Box 1, BA Bilthoven, 3720, Neth.
SO Journal of Chromatography, A (**1995**), 697(1 + 2), 123-9
AB A new solid-phase extn. (SPE) method was developed for the anal. of 16 polyarom. hydrocarbons (**PAHs**) on the US Environmental Protection Agency priority list, in soil samples. Different types of SPE columns were tested and conditioning and elution steps were optimized. In the final

procedure, soil samples are extd. with acetone and, after diln. with **HPLC**-grade water, loaded on a C8 SPE column. After washing, all **PAHs** are eluted with **THF**. The final **THF** ext. is analyzed on an **HPLC** system for **PAHs**. Recoveries of the volatile **PAHs**, naphthalene, acenaphthylene and acenaphthene were 80-90%. All other recoveries are comparable with std. liq.-liq. extn. (LLE) and range from 75 to 90%. The method is compared with the conventional LLE method for different types of real soil samples of a Dutch monitoring program. Results indicate that SPE is a good method for the sample prepn. for the anal. of **PAHs** in soil samples. Compared with LLE, correlation coeffs. are better than 0.9 with relative std. deviations for SPE between 0.8 and 9.1%. LLE std. deviations ranged from 1.1 to 15.1%.

L19 ANSWER 47 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 122:281012 CA
TI A rapid separation of polyaromatic hydrocarbons and free fatty acids by **HPLC** using a **dual-column** method
AU Hibi, Kiyokatsu; Ishii, Daido
CS JASCO Corporation 2967, Hachioji, 192, Japan
SO Kuromatogurafi (**1994**), 15(1), 1-9
LA Japanese
AB A Rapid sepn. of polyarom. hydrocarbons (**PAHs**) and free fatty acids (FFAs) has been studied by reversed-phase high performance **liq. chromatog.** using a **column switching** method. Optimization of column length for sepn. was discussed and a **dual-column** method, in which a short column (50 mm in length) and a long column (250 mm in length) are switched and effectively used to sep. long retention components and short retention components, resp., was examd. to sep. FFAs and PHAs as a test sample at short anal. time. In this expt., a guard column inserted between a delivery pump and a 6-way valve proved to be very effective to decrease the baseline fluctuation at the valve switching time, due to change of pressure and absorbance. The reproducibility of the retention time in this **dual-column** method was examd., comparing that in the gradient elution method. The **dual-column** method gave very good reproducibility of below 0.2% and was able to be routinely used for a rapid sepn. instead of a gradient elution method. As the results, FFAs from C10:0 to C19:0 and PHAs from benzene to benzo(a)pyrene could be completely sepd. at very short anal. time of 15 min and 13 min, resp.

L19 ANSWER 54 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 121:270802 CA
TI Separation of **polycyclic aromatic hydrocarbons** under isocratic conditions by a **column switching** technique
AU Kurganov, A.; Unger, K. K.; Eisenbeiss, F.
CS Institut fuer Anorganische Chemie Analytische Chemie, J. Gutenberg Universitaet, Mainz, 55099, Germany
SO Chromatographia (**1994**), 39(3-4), 175-9
AB A simple and efficient method of sepg. a 20-component **PAH**-mixt. (RSM 1647 std. mixt. + benzene, toluene, perylene and coronene) by RP-HPLC is described. Sepn. was by using two Superspher-100 RP-18 cartridges thermostated at different temps. under isocratic conditions with water-acetonitrile eluent. The anal. time with complete resoln. of all components can be reduced to 15 min.

L19 ANSWER 55 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 121:259428 CA
TI **Column switching** strategies for complex petrochemical sample analysis
AU Packham, Andrew J.
CS Ashton Under Lyne/Lancashire, OL7 0DT, UK
SO Sample Prep. Biomed. Environ. Anal., [Proc. Chromatogr. Soc. Int. Symp.] (**1994**), Meeting Date 1991, 227-35. Editor(s): Stevenson, Derrick; Wilson, Ian D. Publisher: Plenum, New York, N. Y.
AB The development of a method for the anal. of a specific, or group of specific analytes, in a complex matrix is difficult. Problems arise due to the large no. of interfering substances present and because the analyte of interest is often only present at low concns. **Column switching** techniques have been commonly used to solve this type of anal. problem. As the no. of different processes whereby the sepn. of sample components may be achieved increases the ability to handle complex samples likewise increases. As there are a large no. of different parameters that require either complete or partial optimization a significant demand is placed on the method developer. The environmental impact of petrochems. is accepted, their role in the initiation of cancer has been clearly shown. The anal. of petrochems. (e.g. **polynuclear arom.** hydrocarbons), and the product formed through chem. or combustive modification, for the specific carcinogenic substances is thus of importance. Procedures whereby the **polynuclear arom.** hydrocarbons in petrochem. samples, of varying complexity, may be analyzed are discussed. Each sample, having different properties, gives different problems which require different column configurations.

L19 ANSWER 56 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 121:220693 CA
TI Method of measuring content of polycyclic aromatic compound in lanolin and removal thereof
IN Myojyo, Katsunori; Sato, Mikinobu; Nemoto, Hiromitsu
PA Yoshikawa Oil and Fat Co., Ltd., Japan
SO PCT Int. Appl., 50 pp.

PI	**WO 9416322**	**A1**	**WO 1994-JP10**	**19940107**
	EP 632267	**A1**	**EP 1994-904003**	**19940107**

PRAI JP 1993-36033 A 19930112
AB The invention provides a method of measuring the content of polycyclic arom. compds. (**PAH**) remaining in lanolin, which comprises sepg. and concg. the **PAH** by **gel permeation chromatog.** using a styrene-divinylbenzene copolymer and detg. the concd. **PAH** by HPLC with a fluorometric detector; a method of removing the remaining **PAH**, which comprises measuring the **PAH** removal activity of active carbon by the above measuring method thereby select the optimum adsorption condition and calcg. the amt. of the active carbon required for lowering the **PAH** content, and mixing the required amt. of active carbon with lanolin to thereby effect specific adsorption of the **PAH** onto the active carbon; and a method of removing the **PAH** remaining in wool grease or lanolin by the vacuum distn. of the grease or lanolin under specified conditions either directly or after being treated with a borate and, if necessary, obtaining various lanolin derivs. from the treated wool grease or lanolin.

L19 ANSWER 71 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 117:215898 CA
TI Direct determination of benzo[a]pyrene in oil distillates by on-line two-dimensional **HPLC** with **column switching**
AU Lamprecht, G.; Huber, J. F. K.
CS Inst. Anal. Chem., Univ. Vienna, Vienna, 1090, Austria
SO Chromatographia (**1992**), 34(5-8), 376-80
AB A selective and sensitive high-pressure **liq. chromatog.** method is described for the detn. of benzo[a]pyrene (I) in petroleum fractions by means of **column switching**, in which the dild. samples are injected directly onto a silica column with isooctane eluent. After fast elution of the main part of the sample, the I-contg. fraction was transferred online to a dinitroaryl-modified silica column for final sepn. with isooctane-**THF**. A detection limit of 50 parts per trillion could be achieved using fluorescence detection.

L19 ANSWER 76 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 115:186465 CA
TI **Column switching** for the high-performance liquid chromatographic analysis of **polynuclear aromatic** hydrocarbons in petroleum products
AU Packham, Andrew J.; Fielden, Peter R.
CS Dep. Instrum. Anal. Sci., Univ. Manchester, Inst. Sci. and Technol., Manchester, UK
SO Journal of Chromatography (**1991**), 552(1-2), 575-82
AB HPLC , when used in conjunction with **column-switching** procedures, can realize the sepn. of specific analytes in complex mixts. such as petroleum products. A combination of cyclodextrin and reversed-phase bonded phases was investigated for this application. The employment of these differing retention mechanisms permits the rapid detn. of **polynuclear arom.** hydrocarbons with no sample prepn. of pretreatment, hence the anal. time is reduced significantly as is the risk of contamination of the lab. personnel and environment.

L19 ANSWER 85 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 111:181622 CA
TI Polymer-based packing materials with alkyl backbones for reversed-phase **liquid chromatography**. Performance and retention selectivity
AU Tanaka, Nobuo; Ebata, Toshihiro; Hashizume, Katsushi; Hosoya, Ken; Araki, Mikio
CS Dep. Polym. Sci. Eng., Kyoto Inst. Technol., Kyoto, 606, Japan
SO Journal of Chromatography (**1989**), 475, 195-208
AB Polymer-based packing materials for reversed-phase **liq. chromatog.** (poly (styrene-divinylbenzene), poly(alkyl methacrylate) and esterified poly (vinyl alc.)) were examd. with respect to their performance and retention characteristics for a variety of hydrocarbons in aq.-org. mobile phases. Materials with alkyl backbones showed performance comparable with octadecyl-bonded silica under optimized conditions. The performance depends on the mol. shape, rigidity, and arom. character of the solutes as well as on the nature of the org. solvents in the mobile phase. Better performance was generally seen with alkyl compds., compared with arom. compds. In a mobile phase contg. **THF**, in which most packing materials showed better performance than in MeOH-HgO, packing

materials with arom. functionality showed lower efficiencies only for planar **polynuclear arom.** hydrocarbons. All the polymer-based packing materials showed preferential retention of arom. solutes, esp. for those with rigid, planar structure rather than flexible, bulky compds., when these packing materials are compared with an octadecyl-bonded silica phase. Polystyrene and poly(vinyl alc.)-based packing materials showed a greater preference than did the other alkyl-type polymer gels, although this preference was reduced in **THF**-H2O. The retention selectivity and the differences in column performance of the polymer-based phase are explained in terms of the biporous structure of the polymer gels and the solvation of the polymer chains by org. solvents.

L19 ANSWER 87 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 111:177592 CA
TI Selective determination of benzo[a]pyrene in petroleum-based products using **multi-column liquid chromatography**
AU Fielden, P. R.; Packham, A. J.
CS Dep. Instrum. Anal. Sci., UMIST, Manchester, M60 1QD, UK
SO Journal of Chromatography (**1989**), 479(1), 117-24
AB A method is given for the rapid online detn. of benzo[a]pyrene in petroleum-based products, such as diesel oil and aviation fuel. A **column-switching** technique is used to obtain the necessary resoln. Fluorescence detection is used to further increase the selectivity towards the **polynuclear arom.** hydrocarbons. A cyclodextrin-bonded phase column was used to give the initial fractionation. The fraction of interest was then heart cut onto a reserved-phase C18 anal. column and sepd. by using gradient elution. This technique removes, with the exception of diln. and filtration, any necessary pre-anal. step.

L19 ANSWER 88 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 111:146043 CA
TI The use of large **polycyclic aromatic hydrocarbons** to study retention in nonaqueous reversed-phase **HPLC**
AU Fetzer, J. C.; Biggs, W. R.
CS Chevron Res. Co., Richmond, CA, 94802, USA
SO Chromatographia (**1989**), 27(3-4), 118-22
AB Elution strengths of 11 common **HPLC** solvents on a polymeric C18 phase were compared using a marker set of **polycyclic arom. hydrocarbons.** Naphthalene, pyrene, benzo[ghi]perylene, and three larger naphtho-logues of 8, 10, and 12 rings (constituting a "naphthalene zigzag" series) were chosen because they span the solvent strength range up to and including the strongest solvents, **THF** and chlorobenzene. Four pairs of similarly shaped isomers were used to probe solvent select-ivity. With the exception of **THF**, **HPLC** solvent strength correlated with obsd. red shifts of fluorescence band max. in each solvent. For **THF**, the pure solvent and blended mixts. behaved quite differently.

L19 ANSWER 96 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 107:108518 CA
TI Determination of polyphenylarenes and **polynuclear aromatic** hydrocarbons by reversed-phase **HPLC**
AU Spitzer, T.
CS Fac. Eng., Nagoya Univ., Nagoya, 464, Japan

SO Journal of Liquid Chromatography (**1987**), 10(4), 593-601
AB Std. mixts. of polycyclic compds. are analyzed by reversed-phase microcapillary **liq. chromatog.** MeCN/H2O and MeCN/**THF**/H2O are employed as stationary phases, and capacity ratios are reported. Polyphenylarenes can be distinguished from **polynuclear arom.** hydrocarbons by a large shift in capacity ratios when changing the mobile phase. The shift in capacity ratios is most significant for 1,3,5-triphenylbenzene, which is demonstrated by a gradient elution. The influence of **THF** and H2O on retention behavior of solutes is described.

L19 ANSWER 98 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 105:90499 CA
TI Trace analysis by microbore HPLC
AU Van der Wal, S.
CS Varian Instrum. Group, Walnut Creek, CA, 94598, USA
SO Journal of Liquid Chromatography (**1986**), 9(8), 1815-28
AB The potential and problems of trace anal. by microbore HPLC with on-column concn. and the benefits of addnl. **column-switching** in several modes are discussed. An example of the performance of an on-**column** concn. **column-switching** microbore HPLC system is shown for **polycyclic arom. hydrocarbons.**

L19 ANSWER 99 OF 128 CA COPYRIGHT 2007 ACS on STN
AN 105:36915 CA
TI Rapid, semimicro method for determination of **polycyclic aromatic hydrocarbons** in shellfish by automated gel permeation/liquid chromatography
AU Musial, Charles J.; Uthe, John F.
CS Halifax Fish. Res. Lab., Fish. Oceans Canada, Halifax, NS, B3J 2S7, Can.
SO Journal - Association of Official Analytical Chemists (**1986**), 69(3), 462-6
AB A simple, rapid, easily automated method is described for the detn. of **polycyclic arom. hydrocarbons** (**PAHs**) in shellfish such as American lobster (Homarus americanus) and blue mussel (Mytilus edulis). **PAHs** are extd. from small mats. (1-8 g) of tissue by sapon. in 1N ethanolic KOH followed by partitioning into 2,2,4-trimethylpentane. This soln. is evapd. just to dryness by rotary evapn. and the residue is dissolved in cyclohexane-dichloromethane (1 + 1) for **gel permeation chromatog.** (**GPC**) on Bio-Beads SX-3. The **GPC** procedure is ideal as a screening method in the range 25-18,000 ng **PAHs**/g tissue. If individual **PAH** measurements are required, the appropriate **GPC** fraction is collected and **PAHs** are sepd. by reversed-phase liq. chromatog. with fluorometric detection.

Individual **PAHs** at concns. ≥0.25-10 ng/g can be detd. Recoveries of added fluoranthene [206-44-0], pyrene [129-00-0], benz[a]anthracene (I) [56-55-3], chrysene [218-01-9], benzo[e]pyrene [192-97-2], benzo[b]fluoranthene [205-99-2], benzo[k]fluoranthene [207-08-9], benzo[a]pyrene [50-32-8], dibenz[a,h]anthracene [53-70-3], benzo[ghi]perylene [191-24-2], and indeno[1,2,3-cd]pyrene [193-39-5] were quant., with relative std. deviations ranging from 0.0 to 16.9%.

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STN INTERNATIONAL LOGOFF AT 12:39:47 ON 24 OCT 2007

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(FILE 'HOME' ENTERED AT 08:07:27 ON 26 OCT 2007)
FILE 'CA' ENTERED AT 08:07:36 ON 26 OCT 2007
L1 53000 S PAH OR PNA OR(POLYCYCLIC OR POLYNUCLEAR)(1A) AROMATIC
L2 5317 S L1 AND(OIL OR BUTTER OR MARGARINE OR DRESSING)
L3 25386 S GEL(3A)(PERMEAT? CHROMATOG? OR SIZE EXCLU?) OR GPC OR HPGPC
L4 309032 S (REVERSE PHASE OR RP)(3A)(HPLC OR HIGH(4A)CHROMATOG?) OR RPLC OR HPLC OR LIQUID CHROMATOG? OR LC
L5 30 S L2 AND L3
L6 456 S L2 AND L4
L7 152 S L6 AND(CLEAN UP OR CLEANUP OR PRECONCENTR? OR CONCENTRAT? OR SWITCH?(2A)COLUMN)
L8 66 S L1 AND (CREAM OR MAYO? OR EDIBLE) NOT L2
L9 1 S L8 AND L3
L10 6 S L8 AND L4
L11 185 S L5,L7,L9-10
L12 140 S L11 AND PY<2004
FILE 'BIOSIS' ENTERED AT 08:22:37 ON 26 OCT 2007
L13 53 S L12
FILE 'MEDLINE' ENTERED AT 08:23:11 ON 26 OCT 2007
L14 29 S L12
FILE 'CA, BIOSIS, MEDLINE' ENTERED AT 08:23:54 ON 26 OCT 2007
L15 152 DUP REM L12 L13 L14 (70 DUPLICATES REMOVED)

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L15 ANSWER 9 OF 152 BIOSIS on STN
AN 2003:130186 BIOSIS
TI Determination of **polycyclic aromatic** hydrocarbons in shellfish and fish by **gel permeation chromatography** and high performance liquid chromatography.
Original Title: Determinacion de hidrocarburos aromaticos policiclicos en moluscos y pescados por cromatografia de filtracion en gel y cromatografia liquida..
AU Burdaspal, Pedro A.; Legarda, Teresa Maria; Leon, Isabel Garcia [Reprint Author]
CS Agencia Espanola de Seguridad Alimentaria, Centro Nacional de Alimentacion, 28220, Majadahonda (Madrid), Spain
SO Alimentaria, (**Enero-Febrero 2003**) Vol. 40, No. Separata Al Numero 340, 3-14. print.
LA Spanish
AB This paper describes an appropriate analytical method to determine the contents of **polycyclic aromatic** hydrocarbons in samples of shellfish and fish by high performance liquid chromatography with fluorescence detection including a previous step to purify the crude extracts by **gel permeation chromatography**. This method is based and enlarges the scope of a procedure described formerly for the specific determination of **polycyclic aromatic** hydrocarbons in pomace olive **oil** (Alimentaria, 328, 117-126, 2001). The method has been internally validated for the determination of the eight **polycyclic aromatic** hydrocarbons specified in the Orden of July 25, 2001, published in the Spanish Official State Bulletin no. 178: benzo(a)pyrene, benzo(e)pyrene, benzo(a)anthracene,

benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene and indeno(1,2,3-c,d)pyrene, in fresh mussels and horse mackerel. The limit of determination was 0.5 pg/kg for each hydrocarbon.

L15 ANSWER 25 OF 152 BIOSIS on STN
AN 2002:203303 BIOSIS
TI Determination of **polycyclic aromatic** hydrocarbons in pomace olive **oil** by **gel permeation chromatography** and high performance liquid chromatography.
Original Title: Determinacion de hidrocarburos aromaticos policiclicos en aceites de orujo de oliva por cromatografia de filtracion en gel y cromatografia liquida.
AU Burdaspal, P. A. [Reprint author]; Legarda, T. M.; Sanchez, J. J.
CS Centro Nacional de Alimentacion, Instituto de Salud Carlos III, 28220, Majadahonda, Madrid, Spain
SO Alimentaria, (**Diciembre, 2001**) Vol. 38, No. 328, pp. 117-126.
LA Spanish
AB This paper describes an appropriate analytical method to determine the contents of **polycyclic aromatic** hydrocarbons in pomace olive **oil** samples by high performance liquid chromatography with fluorescence detection including a previous step to purify the samples by **gel permeation chromatography**. This method is based and enlarges the scope of a procedure described recently for the specific determination of benzo(a) pyrene in native olive **oil** and pomace olive **oil** (Alimentaria, 327, 11-18, 2001). The method has been internally validated for the determination of the eight **polycyclic aromatic** hydrocarbons specified in the Orden of July 25, 2001, published in the Boletin Oficial del Estado (Spanish Official State Bulletin) ndegree 178 and referred to setting limits for certain **polycyclic aromatic** hydrocarbons in pomace olive **oil**: benzo(a)pyrene, benzo(e)pyrene, benzo(a)anthracene, benzo(b) fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, benzo(g,h,i) perylene e indeno(1,2,3 - c,d)pyrene. The limit of determination was 0.57 mug/kg for each hydrocarbon. The results of this validation study show the usefulness of this method as a tool to control the presence of those hydrocarbons.

L15 ANSWER 59 OF 152 CA COPYRIGHT 2007 ACS on STN
AN 126:46409 CA
TI Determination of **polycyclic aromatic** hydrocarbons in edible **oils** and fats by online donor-acceptor complex chromatography and high-performance **liquid chromatography** with fluorescence detection
AU van Stijn, F.; Kerkhoff, M. A. T.; Vandeginste, B. G. M.
CS Unilever Research Laboratorium, Olivier van Noortlaan 120, AT Vlaardingen, 3133, Neth.
SO Journal of Chromatography, A (**1996**), 750(1+2, 4th International Symposium on Hyphenated Techniques in Chromatography and Hyphenated Chromatographic Analyzers, 1996), 263-273
AB Various off-line methods for **clean-up** and sample enrichment are available for the anal. of **polycyclic arom.** hydrocarbons (**PAHs**) in edible **oils** and fats. These methods consist of laborious and time consuming procedures. This study reports an online method using **LC-LC** coupling. After **clean-up** of the sample on a donor-acceptor complex

chromatog. (DACC) column the **PAHs** are transferred to and sepd. on an anal. **HPLC** column. Quantification is carried out with fluorescence detection. The DACC column **clean-up** is fast and is carried out during the **HPLC** run of the previous sample. Compared to the traditional methods this automated online method saves considerable time and significantly reduces the amt. of solvent waste. The method uses common **HPLC** equipment and its performance has been evaluated.

L15 ANSWER 67 OF 152 CA COPYRIGHT 2007 ACS on STN
AN 128:229496 CA
TI Determination of nitropolycyclic aromatic hydrocarbons in food using GC and **HPLC** methods
AU Schlemitz, S.; Pfannhauser, W.
CS Institute of Bio- and Food Chemistry, University of Technology Graz, Graz, A-8010, Austria
SO Current Status and Future Trends in Analytical Food Chemistry, Proceedings of the European Conference on Food Chemistry, 8th, Vienna, Sept. 18-20, 1995 (**1995**), Volume 1, 97-101. Editor(s): Sontag, Gerhard; Pfannhauser, Werner. Publisher: Austrian Chemical Society, Vienna, Austria.
AB Nitrated **polycyclic arom.** hydrocarbons were detd. in different kinds of food. The investigation of food matrixes necessitates the development of appropriate anal. procedures for sensitive monitoring and detn. of these compds. The sample prepn. is short and efficient. Depending on the sample material it involves a soxhlet extn. (meat) or an ultrasonic extn. (**oils**, vegetables, fruit and spices). The **clean-up** procedure employs solvent partition, solid phase extn. on silica gel and as final step for all fat-contg. samples, size exclusion chromatog. using biobeads SX-3. The anal. of the nitro-**PAHs** is carried out by GC/MSD and by **HPLC** with fluorescence detection as alternative method. Owing to the fact that nitro-**PAHs** show no significant fluorescence signal it is necessary to reduce them to the corresponding amino-**PAHs**. Therefore an online redn. with a Pt/Rh- catalyst was performed. Seven nitropolycyclic arom. compds. were pos. identified and quantified in vegetables, smoked and grilled foods, **oils**, tea, coffee and spices.

L15 ANSWER 82 OF 152 CA COPYRIGHT 2007 ACS on STN
AN 118:211513 CA
TI Trace enrichment and **HPLC** analysis of **PAHs** in edible **oils** and fat products, with **liquid chromatography** on electron-acceptor stationary phases in connection with reverse phase and fluorescence detection
AU Perrin, J. L.; Poirot, N.; Liska, P.; Thienpont, A.; Felix, G.
CS Inst. Corps Gras, Bordeaux, Fr.
SO Fett Wissenschaft Technologie (**1993**), 95(2), 46-51
AB A relatively rapid method for the detn. of **polycyclic arom.** hydrocarbons (**PAH**) in edible **oils** and fats is described, which employs donor-acceptor-complex chromatog. with a tetrachlorophthalimidopropyl-modified SiO2 for sample **clean-up**, followed by gradient reversed-phase **HPLC** through octadecyl-SiO2 with wavelength-programmed fluorescence detection. Recoveries of 78-121% are reported for **oils** spiked with 1-10 μg/kg of various **PAHs**; a complete anal. requires ~2 h compared to 10-20 h for other anal. methods.

L15 ANSWER 117 OF 152 CA COPYRIGHT 2007 ACS on STN
AN 108:4754 CA
TI Simplified determination of benzo(a)pyrene and other **polycyclic aromatic** hydrocarbons in various food materials by **HPLC** and TLC
AU Stijve, T.; Hischenhuber, C.
CS Cent. Quality Assur. Lab., Nestec Ltd., Vevey, 1800, Switz.
SO Deutsche Lebensmittel-Rundschau (**1987**), 83(9), 276-82
AB A method is described for the simplified detn. of 12 **polycyclic arom.** hydrocarbons (**PAHs**) in various commodities including smoked meats, fish, vegetable **oils**, coffee, coffee ext., tea, herbs, spices and spice oleoresins. The sample is subjected to sapon., solvent partition and column **clean-up**, whereupon the **PAHs** are detd. by **HPLC** using fluorescence detection. In many cases, the anal. may be confined to the routine estn. of benzo(a)pyrene and, for this purpose, an optional determinative step is described using thin-layer chromatog. with fluorodensitometric measurement. Recoveries of added **PAHs** at levels of 2.5-75 μ/kg to various substrates ranged 82-103%. Results obtained with the method on a variety of food materials are briefly discussed. Attention is drawn to high levels occurring in some vegetable **oils** and in spice oleoresins.

L15 ANSWER 122 OF 152 CA COPYRIGHT 2007 ACS on STN
AN 105:132265 CA
TI Determination of **polycyclic aromatic** hydrocarbons (**PAH**) in edible vegetable **oils** by **liquid chromatography** and programmed fluorescence detection. Comparison of caffeine complexation and XAD-2 chromatography sample **clean-up**
AU Welling, Paul; Kaandorp, Ben
CS Food Insp. Serv., Amsterdam, NL-1018 BK, Neth.
SO Zeitschrift fuer Lebensmittel-Untersuchung und -Forschung (**1986**), 183 (2), 111-15
AB Two **clean-up** procedures were compared for the anal. for **polycyclic arom.** hydrocarbons (**PAHs**) in edible vegetable **oils**. One method comprises a liq.-liq. extn. followed by XAD-2 chromatog. and the other a caffeine-HCO2H complexation. The **clean-up** step is followed by gradient reversed-phase **HPLC** is combination with wavelength-programmed fluorescence detection. Due to better repeatability and simplicity, the XAD-2 method was selected for the detn. of **PAHs** in 14 different vegetable **oils**. Between the different **oil** samples, large differences were obsd. in **PAH concns**. **PAH concns**. in vegetable **oil** samples from the Dutch market appear to be comparable with those found in other countries.

L15 ANSWER 129 OF 152 CA COPYRIGHT 2007 ACS on STN
AN 100:66760 CA
TI Analysis of **polycyclic aromatic** hydrocarbons in UK total diets
AU Dennis, M. J.; Massey, R. C.; McWeeny, D. J.; Knowles, M. E.; Watson, D.
CS Food Sci. Div., Minist. Agric., Fish. Food, Norwich, NR2 4SX, UK
SO Food and Chemical Toxicology (**1983**), 21(5), 569-74
AB Anal. of UK total-diet samples for polycyclic hydrocarbons was carried out using a simplified sample **clean-up** and a high-performance **liq. chromatog.** dual fluorescence detector system. The results indicate that cereals and **oils**/fats contribute the major part (approx. 1/3 each) of

the **polycyclic arom.** hydrocarbons in these total diets. Fruit, sugars, and vegetables provide much of the remainder (approx. 1/4) while meat, fish, milk, and beverages make relatively minor contributions. These results are compared with others in the current literature on **polycyclic arom.** hydrocarbons in foods. The levels in the UK diet seem to be at least as low as those found elsewhere.

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STN INTERNATIONAL LOGOFF AT 08:25:32 ON 26 OCT 2007